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- (71) Applicant: HYPERCOM CORPORATION [US/US];
2851 West Kathleen Road, Phoenix, AZ 85053 (US).

(74) Agent: KELLY, Michael, K.; Snell & Wilmer L.L.P., One Arizona Center, 400 East Van Buren, Phoenix, AZ 85004-2202 (US).

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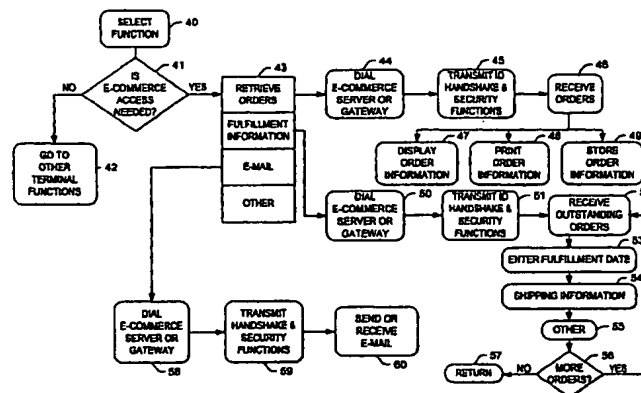
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(72) Inventor: WALLNER, George; 2851 West Kathleen Road, Phoenix, AZ 85053 (US).

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(54) Title: METHOD AND APPARATUS FOR POINT OF SALE DEVICE TO ACCESS WEB SITE FOR PROCESSING ORDERS AND FULFILLMENT INFORMATION



(57) Abstract: A method and apparatus for communications between a point of sale payment terminal and an e-commerce server is disclosed. A point of sale payment terminal is disclosed having a modem and coupled to a telephone line. An e-commerce server coupled to the Internet is disclosed, which is adapted to receive and store order information from customers who connect to the e-commerce server via the Internet. A gateway coupled to the e-commerce server is also disclosed. The gateway has an interface to a telephone line. The gateway has a terminal server adapted to communicate with the point of sale payment terminal when a communication path is established between the point of sale payment terminal and the gateway over a telephone line. The gateway has a browser emulator adapted to communicate with the e-commerce server. The gateway is operative to translate select communications from the point of sale payment terminal into a format compatible with the e-commerce server, and the gateway is operative to translate select communications from the e-commerce server into a format compatible with the point of sale payment terminal. In accordance with the present invention, the point of sale payment terminal may access customer order information on the e-commerce server and may supply customer order fulfillment information to the e-commerce server.

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METHOD AND APPARATUS FOR POINT OF SALE DEVICE TO ACCESS WEB SITE FOR PROCESSING ORDERS AND FULFILLMENT INFORMATION

BACKGROUND OF THE INVENTION

5 Technical Field

The present invention relates, generally, to point of sale devices for communicating with an e-commerce web site to exchange customer order and order fulfillment information.

Background Art and Technical Problems

10 Conventional wisdom for point of sale payment terminals has been to keep the cost of individual terminals as low as possible. This has necessarily implied a very low level of functionality in such terminals. In limited circumstances, a point of sale payment terminal might be provided with very limited communication capability to make a modem connection to send only financial transaction information to a remote host. For example, a relatively slow
15 modem connection has sometimes been provided between a point of sale payment terminal and a host for credit card approval.

In the past, a typical merchant e-commerce web site would be maintained by an independent service provider, or ISP. More recently, application service providers, or ASPs, have been hosting e-commerce web sites. When a merchant needed to check on orders and to
20 process fulfillment information, an e-commerce web site would typically have to be accessed by a PC computer running a web browser program. In some cases, a merchant may not have his or her own PC computer. The requirement for an additional PC computer to access an e-commerce web site increased the cost of conducting business over the Internet.

In the past, even when the merchant had a PC computer, order and fulfillment
25 information would have to be processed in a multi-step manner from a point of sale payment terminal and downloaded to a PC computer maintained for administrative purposes that typically may not be accessible to sales personnel. While the administrative PC computer may communicate with the merchant's e-commerce web site to obtain and update order and fulfillment information, it is generally not available to sales staff. Sales personnel in a store
30 would not have immediate access to information from the e-commerce web site, and could not address customer inquiries or other needs concerning related transactions involving the e-commerce web site. As a result, the e-commerce web site may not have the latest information concerning a customer's pending order or fulfillment information.

The increasing importance of the Internet as a channel for commerce has resulted in more transactions via e-commerce web sites. With the growing importance of e-commerce web sites, a need has arisen for improved methods and apparatus to process orders and fulfillment information, especially for smaller merchants. A cost effective and easy to use means is required for communication with e-commerce web sites, and processing of orders and fulfillment information at the point of sale by retail staff.

Providing the capability of communication with e-commerce web sites in a point of sale payment terminal greatly improves the usefulness and functionality of such terminals, and avoids the need for a separate PC computer to access the merchant's e-commerce web site. In addition, by adding functionality to point of sale payment terminals, improved payment systems, communications networking, transaction processing, and value-added applications may be provided.

Thus, prior point of sale devices and methods of processing orders and fulfillment information with e-commerce web sites have not been altogether satisfactory, and significant room for improvement still exists.

SUMMARY OF THE INVENTION

In accordance with an exemplary embodiment of the present invention, a method and apparatus for transmission of time critical order and fulfillment information between a point of sale payment terminal and an e-commerce web site is provided. The availability of powerful new point of sale payment terminals in accordance with the present invention and the ubiquitous power of the Internet provides the potential of transforming point of sale payment terminals into information delivery and program access platforms for consumers and retailers, bringing increased automation to a retail store that improves merchant profitability and customer service.

A preferred embodiment includes a point of sale payment terminal having a modem and coupled to a communication path such as a telephone line. An e-commerce server coupled to the Internet is included, which is enabled to receive and store order information from customers who connect to the e-commerce server via the Internet. An apparatus in accordance with the present invention further comprises a gateway coupled to the e-commerce server. The gateway has an interface to a telephone line. The gateway has a terminal server adapted to communicate with the point of sale payment terminal when a communication path is established between the point of sale payment terminal and the gateway over a telephone line. The gateway has a browser emulator adapted to communicate with the e-commerce server. The gateway is

operative to translate select communications from the point of sale payment terminal into a format compatible with the e-commerce server, and the gateway is operative to translate select communications from the e-commerce server into a format compatible with the point of sale payment terminal. In accordance with the present invention, the point of sale payment terminal may access customer order information on the e-commerce server and may supply customer order fulfillment information to the e-commerce server.

Alternatively, in accordance with another embodiment of the present invention, a point of sale payment terminal may contain a browser emulator and translator functionality that enables it to support necessary e-commerce functions. A point of sale payment terminal in accordance with this embodiment may connect directly to an e-commerce server without an intermediate gateway.

Alternatively, in accordance with yet another embodiment of the present invention, a point of sale payment terminal may contain a limited function browser. A point of sale payment terminal in accordance with this embodiment may connect to an e-commerce server through a translator gateway server. Or alternatively, a point of sale payment terminal in accordance with this embodiment may connect to an e-commerce server via a translator page incorporated into the e-commerce server.

In accordance with the present invention, the point of sale payment terminal is a dual function device that supports financial transaction processing (credit or debit) using traditional techniques, in combination with a browser or browser emulator, or proprietary communication interface with a translator gateway, to support e-commerce functions (such as processing customer order information concerning orders placed with the e-commerce web site by customers connecting via the Internet, and communication of fulfillment information with the e-commerce web site).

The present invention includes a method of communicating with an e-commerce server using a point of sale payment terminal to access an e-commerce web server for customer order processing and customer order fulfillment functions.

The present invention includes a method of communicating between a point of sale payment terminal and an e-commerce server, comprising the steps of: (1) receiving data over a telephone line representing a request for customer order or other information from a point of sale payment terminal in a proprietary format; (2) translating the data from the proprietary format into a format compatible with an e-commerce server; (3) transmitting the data over a communication path to the e-commerce server in a format compatible with the e-commerce server to request customer order information from the e-commerce server; (4) receiving

customer order information from the e-commerce server in a format compatible with the e-commerce server; (5) translating the customer order information from a format compatible with the e-commerce server into a proprietary format compatible with the point of sale payment terminal; and, (6) transmitting the customer order information over the telephone line to the point of sale payment terminal.

The present invention allows a merchant to sell products on the Web without having to own a computer. This is an advantage for merchants who do not own a computer, or do not have one available at all times. A point of sale payment terminal in accordance with the present invention supports key functions needed to complete sales via a Web store. A clerk can pick up orders, verify transactions approvals, arrange shipments of merchandise, notify customers of shipments, and respond to simple inquiries, all without the complex training and support requirements of a computer.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will hereinafter be described in conjunction with the appended drawing figures, wherein like numerals denote like elements, and:

Figure 1 is a block diagram schematic representation of a connection between a point of sale payment terminal and an e-commerce web site in accordance with the present invention;

Figure 2 is a block diagram illustrating the functional units of software used to connect a point of sale payment terminal and an e-commerce web site in accordance with the present invention;

Figure 3 is a flow chart illustrating steps in a method of communicating between a point of sale payment terminal and an e-commerce web site in accordance with the present invention; and,

Figure 4 is a block diagram schematic representation of an alternative embodiment of the present invention.

Figure 5 is a schematic representation of an alternative embodiment of the present invention.

DETAILED DESCRIPTION OF A PREFERRED EXEMPLARY EMBODIMENT

Figure 1 illustrates a block diagram schematic representation of a connection between a point of sale payment terminal 10 and an e-commerce web site 15 in accordance with the present invention. A POS/e-commerce gateway 13 is provided to facilitate communication. The POS/e-commerce gateway 13 is coupled or connected to an e-commerce server or e-

commerce web site 15 via a digital network or connection 16 preferably using a TCP/IP protocol. The POS/e-commerce gateway 13 is also connected or coupled to a dial access interface 12 capable of interfacing to a telephone line 17. The POS/e-commerce gateway 13 is also coupled to a database 14. The database 14 may be used to store terminal information, ID or security verification information, or other information relating to the merchant and the terminal. Although shown as running on a separate server in the illustrated embodiment shown in Figure 1, the POS/e-commerce gateway 13 may run on the same server as the e-commerce web site 15. The e-commerce web site 15 is also coupled to the Internet 19. Alternatively, the e-commerce web site may be connected to an intranet or other IP network 19.

A point of sale payment terminal 10 is coupled via a communication path 18, 11, 17 to the POS/e-commerce gateway 13. In the illustrated embodiment, the terminal 10 includes a modem and may connect via a telephone line 18 to the public switched telephone network, or PSTN 11. The terminal 10 may alternatively connect via a cable modem or an asynchronous digital subscriber line ("ADSL"), as described below with reference to Figure 4. In the illustrated embodiment shown in Figure 1, a connection is established to the telephone line 17 through the PSTN 11, and through the dial access interface 12, to the gateway 13. A preferred point of sale payment terminal 10 may use proprietary hardware, and may communicate using a proprietary interface or communication protocol, or may communicate using a subset of a standard browser protocol. A point of sale payment terminal 10 can be based upon an Intel processor, or employ a PC based architecture, but need not necessarily be so constructed. An ASIC based system or a proprietary architecture may also be used for the point of sale payment terminal 10. In accordance with one embodiment of the present invention, a proprietary architecture may be employed for the point of sale payment terminal, and a proprietary communication protocol may be employed if desired. The present invention provides the flexibility of accommodating the use of a proprietary communication protocol by the point of sale payment terminal 10, particularly if it is cost effective for a particular application. Thus, it is desirable to provide some form of translation between the point of sale payment terminal 10 and the e-commerce web site 15. The POS/e-commerce gateway 13 preferably provides services for translation between the terminal 10 and the e-commerce web site 15. This may be explained with reference to Figure 2.

The terminal 10 runs a client application 20 shown in Figure 2. Communication is established with a gateway 30 via a telephone line 29. The gateway 30 may preferably run on a gateway server 13, such as that shown in Figure 1. Referring to Figure 2, the gateway 30 includes a terminal server 21 that communicates with the terminal client 20 using whatever

proprietary interface the terminal 20 may employ. When a connection is established, identification and security is handled by an ID and security module 22.

The terminal server module 21 interfaces with a relay 23. The relay 23 may include translation tables 24. The relay interfaces with a browser emulator 25. The browser emulator 25 is preferably connected over a digital connection 28 to an IP network 26. The IP network 26 preferably comprises the Internet. An e-commerce server 27 is also connected to the IP network 26. A TCP/IP protocol may be used to communicate with the e-commerce server 27.

Once communication is established between the client 20 and the gateway 30, and appropriate security protocols have been satisfied, information received by the terminal server 21 is passed to the relay 23. Using tables 24, the relay translates information received from the terminal client 20 into a form that can be understood by the browser emulator 25. The browser emulator 25 packages information to be transmitted to the e-commerce server 27 into a format that mimics a web browser. As far as the e-commerce server 27 is concerned, it is as though a browser was connected to the e-commerce server 27. The information may be transmitted in a hypertext markup language format, or html format, to the e-commerce server.

The e-commerce server 27 transmits information, preferably in html format, over the IP network 26 to the browser emulator 25. The browser emulator 25 decodes the html format, and extracts the information contained therein. That information is passed to the relay 23. The relay 23 uses the tables 24 to look up how the information is to be translated into a form that the client 20 will understand, or will be able to display. The relay 23 then formats the information into a format compatible with the client 20, and passes the information to the terminal server 21. The terminal server 21 transmits the information to the client 20 over the telephone line 29.

The terminal client 20 may be used to connect to the e-commerce server 27 (via the gateway 30) to access information concerning orders placed by customers who connect to the e-commerce web site 27 over the Internet 26. The terminal client 20 may also be used to upload fulfillment information to the e-commerce web site 27 as orders are filled or processed. For example, personnel in the shipping department may upload information to the web site 27 indicating which orders had been shipped, as well as tracking information, using a terminal client 20. Other personnel may download new orders from the web site 27 using a terminal client 20, and respond with an e-mail acknowledgment of the order to the customer.

Figure 3 illustrates a flow chart showing steps in a method of communicating between a point of sale payment terminal 10 and an e-commerce web site 15 in accordance with the present invention. The method starts with the step 40 of selecting a function. A point of sale

payment terminal 10 may offer a number of functions. In step 41, a determination is made whether access is needed to the e-commerce server 15 for the selected function. If access is not needed, the method proceeds to step 42 and other conventional terminal functions are invoked. If access is needed in step 41, the method proceeds to step 43, where the user is preferably presented with a menu. In step 43, the user may select one of a plurality of functions from the menu of available choices. Alternatively, the user made indicate an appropriate command or code to designate the desired function. If the option of retrieving orders is selected in step 43, the method proceeds to step 44 and the terminal 10 dials or otherwise connects to the e-commerce server 15 or the gateway 13.

The method proceeds to step 45 where the terminal 10 transmits identification information, establishes appropriate handshake procedures, and security functions such as a password are checked to verify that the user is an authorized user of the system. The method proceeds to step 46, where the terminal 10 transmits a code to the e-commerce server 15 that is understood to indicate a request for the e-commerce server 15 to transmit order information for pending orders. This may be all pending orders, but is preferably all new orders since the last download. The information may be transmitted one order at a time, or the information may be transmitted in a batch file.

When new order information is received by the terminal 10, the terminal may display the order information in step 47, or print the order information in step 48, or store the order information for later retrieval in step 49.

Referring back to step 43 shown in Figure 3, the user may select the option of uploading fulfillment information. In that case, the method proceeds to step 50 where the terminal dials into or connects with the e-commerce server 15 or the gateway 13. The method proceeds to step 51 where the terminal 10 transmits identification information, establishes appropriate handshake procedures, and security functions are performed to verify that the user is an authorized user of the system

The method then proceeds to step 52, where the terminal 10 transmits a code to the e-commerce server 15 that is understood to indicate a request for the e-commerce server 15 to prepare to upload fulfillment information for pending orders. The e-commerce server 15 may transmit or identify an outstanding order, in which case the user transmits a fulfillment date for that order in step 53. The user then enters shipping information for that order in step 54. Other information for that order may be entered in step 55. The system then checks to determine whether there are any additional outstanding orders in step 56. If not, the method proceeds to

step 57 and returns. If there are additional outstanding orders, the method loops back to step 52 and the procedure is repeated for each outstanding order.

Although the preferred method has been described as processing one order at a time in steps 52 through 56, the outstanding orders may alternatively be processed in a batch mode as a group.

Returning to step 43 in Figure 3, if the user selects the e-mail option from the menu, the method proceeds to step 58. In step 58, the terminal 10 dials into or connects with the e-commerce server 15 or the gateway 13. As described above, in step 59 the terminal 10 transmits identification information, establishes appropriate handshake procedures, and security functions are performed to verify that the user is an authorized user of the system. Then in step 60, an e-mail module may be invoked to send and receive e-mail communications to and from the e-commerce server 15. In addition, customers may include in the order information an e-mail address for the customer. An e-mail acknowledgment for an outstanding or new order may be sent to the customer in step 60, or a response may be sent via e-mail to a customer inquiry concerning an outstanding order.

Figure 4 illustrates an alternative embodiment of the present invention where a point of sale payment terminal 70 may connect through a modem 71 to an interface or modem 72, which is in turn connected to the Internet 73. The terminal 70 may connect via a cable modem 71 to a cable modem 72 over a coaxial cable line 76. Alternatively, the point of sale payment terminal 70 may connect via a modem 71 to another modem 72 over an asynchronous digital subscriber line ("ADSL") 76. In this example, a gateway 74 is coupled to the Internet 73. The gateway 74 is coupled to an e-commerce server 75. The modem 71 may be integrated into the terminal 70 as part of the same device, or the modem 71 may be plugged into a socket such as a PCMCIA slot on the terminal 70.

An alternative embodiment of the present invention comprises a terminal client 20 running on a point of sale payment terminal 10 that supports browser emulation. In that embodiment, the gateway 30 shown in Figure 2 may be omitted, and the point of sale payment terminal 20 may be able to connect to the e-commerce server 27 without an intervening gateway 30.

Figure 5 is a schematic diagram showing an alternative embodiment of the present invention. A point of sale payment terminal 80 has a modem interface to connect via a dial up connection 81 to an interface 82 coupled to a gateway 83. The gateway 83 is connected to an e-commerce server 93. The point of sale payment terminal 80 may access the e-commerce server 93 to allow a clerk to pick up orders from the e-commerce server 93, to verify transaction

approvals, to arrange shipments of merchandise, to notify customers of shipments, to respond to simple inquiries, and to obtain fulfillment information. The gateway 83 is coupled to an e-mail server 92 to allow for e-mail communication between the point of sale payment terminal 80 and a customer 88. A Web page translator 94 may be used to translate between html format information on the e-commerce server 93 and the point of sale payment terminal 80. Advertising and loyalty functions may be performed by a server 91. For example, a frequent purchaser program may reward frequent customers with points that may be redeemed for prizes, merchandise, etc. The point of sale payment terminal 80 preferably has a graphics screen that faces the consumer in the checkout lane, especially where the consumer signs the receipt or enters a debit PIN. Targeted advertisements may be displayed to the consumer on the graphics screen of the point of sale payment terminal 80, and the displayed advertisement may be selected from a plurality of potential advertisements based upon the consumer's purchase history, consumer survey information submitted by this consumer, or other information particular to this consumer. The point of sale payment terminal 80 may also have a dial up connection to process financial transactions 90, such as credit card approval. In this case, the point of sale payment terminal 80 may be based upon an ICE6000 terminal, available from Hypercom Corporation in Phoenix, Arizona. The point of sale payment terminal is capable of electronic receipt capture functions. Electronic receipt capture information is transmitted to an ERC server 84, and stored in a database 85.

The gateway 83 is coupled to the Internet 86. A customer or consumer 88 may connect via the Internet 86 to the e-commerce Web site 93. The customer 88 may purchase merchandise from the e-commerce Web site 93, send or receive e-mail via the e-mail server 92, or receive a copy of a receipt for a purchase using the electronic receipt capture functionality available via server 84. Receipts can be e-mailed to consumers 88 in an electronic format that allows direct input into personal accounting packages. Charge-back handling may be automated using electronic data interchange ("EDI") to send images to VISA and MasterCard. A merchant 87 may connect to the e-commerce Web site 93 via the Internet 86 to retrieve electronic receipt capture information from the ERC server 84, and to send and receive e-mail. The merchant 87 is able to view, reprint, send by EDI or e-mail receipt images via the Internet 86 using a standard browser. Internet-enabled electronic receipt capture makes receipts (both receipt images and electronic receipts) available to merchants 87, processors, banks, and consumers 88, in real-time via the Internet 86.

In Figure 5, an e-commerce server 89 is shown. The e-commerce server 89 may host a web store.

In Figure 5, the servers 84, 91, 92, 93 and 94 are shown separately for clarity. Those skilled in the art will appreciate that the servers 84, 91, 92, 93 and 94 shown in Figure 5 may be implemented with some or all combined on the same machine or server.

Those skilled in the art will appreciate, after having the benefit of this disclosure, that various modifications may be made to the specific embodiment of the invention described herein for purposes of illustration without departing from the spirit and scope of the invention. The description of a preferred embodiment provided herein is intended to provide an illustration of the principles of the invention, and to teach a person skilled in the art how to practice the invention. The invention, however, is not limited to the specific embodiment described herein, but is intended to encompass all variations within the scope of the appended claims.

CLAIMS

I claim:

1. An apparatus for communication between a point of sale payment terminal and an e-commerce server, comprising:

5 a point of sale payment terminal having a modem and coupled to a telephone line;

an e-commerce server coupled to the Internet, and adapted to receive and store order information from customers who connect to the e-commerce server via the Internet; and,

10 a gateway coupled to the e-commerce server, the gateway also having an interface to a telephone line, the gateway having a terminal server adapted to communicate with the point of sale payment terminal when a communication path is established between the point of sale payment terminal and the gateway over a telephone line, the gateway having a
15 browser emulator adapted to communicate with the e-commerce server, the gateway being operative to translate select communications from the point of sale payment terminal into a format compatible with the e-commerce server, the gateway being operative to translate select communications from the e-commerce server into a format compatible
20 with the point of sale payment terminal, wherein the point of sale payment terminal may access order information on the e-commerce server and may supply fulfillment information to the e-commerce server.

2. A method of communicating between a point of sale payment terminal and an e-commerce server, comprising the steps of:

25 receiving data over a telephone line representing a request for customer order information from a point of sale payment terminal in a proprietary format;

translating said data from said proprietary format into a format compatible with
30 an e-commerce server;

transmitting said data over a communication path to the e-commerce server in a format compatible with said e-commerce server to request customer order information from said e-commerce server;

receiving customer order information from the e-commerce server in a format compatible with the e-commerce server;
translating the customer order information from a format compatible with the e-commerce server into a proprietary format compatible with the point of sale payment terminal; and,
transmitting the customer order information over the telephone line to the point of sale payment terminal.

3. A method of communicating with an e-commerce web server, comprising the step of:

using a point of sale payment terminal to access an e-commerce web server for customer order processing and customer order fulfillment functions.

4. An apparatus for communication between a point of sale payment terminal and an e-commerce server, comprising:

a point of sale payment terminal having a modem and coupled to a communication path, the point of sale payment terminal including a browser emulator that supports e-commerce functions for requesting order information from an e-commerce server and for supplying fulfillment information to an e-commerce server; and,

an e-commerce server coupled to the Internet, and adapted to receive and store order information from customers who connect to the e-commerce server via the Internet, the e-commerce server being coupled to a communication path for communication with the point of sale payment terminal, the e-commerce server being responsive to requests received from the point of sale payment terminal to supply order information to the point of sale payment terminal, and being operative to receive fulfillment information from the point of sale payment terminal.

5. The apparatus according to claim 4, further comprising:
a translator page incorporated into the e-commerce server to facilitate customer order processing and customer order fulfillment functions.

6. The apparatus according to claim 4, wherein:
the browser emulator is a limited function browser.

7. The apparatus according to claim 4, wherein:

5 the point of sale payment terminal is a dual function device that supports
financial credit or debit transaction processing using conventional
techniques, in combination with the browser emulator, to support e-
commerce functions including processing customer order information
concerning orders placed with the e-commerce server by customers
10 connecting via the Internet, and communication of fulfillment
information with the e-commerce server.

8. An apparatus for communication between a point of sale payment terminal and
an e-commerce server, comprising:

15 a point of sale payment terminal having a modem and operative to be coupled to
a communication path, the point of sale payment terminal including a
limited function browser for e-commerce functions including requesting
order information from an e-commerce server and for supplying
fulfillment information to an e-commerce server;

20 a translator gateway coupled to the communication path, the translator gateway
being operative to communicate with the point of sale payment terminal
when the point of sale payment terminal is coupled to the translator
gateway over the communication path, the translator gateway being
operative to translate select communications from the point of sale
25 payment terminal into a format compatible with an e-commerce server,
the translator gateway being operative to translate select communications
from an e-commerce server into a format compatible with the point of
sale payment terminal; and,

30 an e-commerce server coupled to the translator gateway, the e-commerce server
being coupled to the Internet, and adapted to receive and store order
information from customers who connect to the e-commerce server via
the Internet, the e-commerce server being responsive to requests received
from the point of sale payment terminal that have been translated by the
translator gateway to supply order information to the point of sale

payment terminal, and being operative to receive fulfillment information from the point of sale payment terminal that has been translated by the translator gateway, so that the point of sale payment terminal may access order information on the e-commerce server via the translator gateway and may supply fulfillment information to the e-commerce server via the translator gateway.

9. The apparatus according to claim 8, wherein:

the point of sale payment terminal is a dual function device that supports financial credit or debit transaction processing using conventional techniques, in combination with the limited function browser, to support e-commerce functions including processing customer order information concerning orders placed with the e-commerce server by customers connecting via the Internet, and communication of fulfillment information with the e-commerce server.

10. An apparatus for communication between a point of sale payment terminal and an e-commerce server, comprising:

a point of sale payment terminal having a modem and operative to be coupled to a communication path, the point of sale payment terminal including a limited function browser for e-commerce functions including requesting order information from an e-commerce server and for supplying fulfillment information to an e-commerce server; and,

an e-commerce server coupled to the Internet, and adapted to receive and store order information from customers who connect to the e-commerce server via the Internet, the e-commerce server being coupled to the communication path, the e-commerce server including a translator page for translating communications received from the point of sale payment terminal over the communication path, the e-commerce server being responsive to requests received from the point of sale payment terminal that have been translated by the translator page to supply order information to the point of sale payment terminal, and being operative to receive fulfillment information from the point of sale payment terminal that has been translated by the translator page, so that the point of sale

payment terminal may access order information on the e-commerce server via the translator page and may supply fulfillment information to the e-commerce server via the translator page.

- 5 11. The apparatus according to claim 10, wherein:
- 10 the point of sale payment terminal is a dual function device that supports financial credit or debit transaction processing using conventional techniques, in combination with the limited function browser, to support e-commerce functions including processing customer order information concerning orders placed with the e-commerce server by customers connecting via the Internet, and communication of fulfillment information with the e-commerce server.

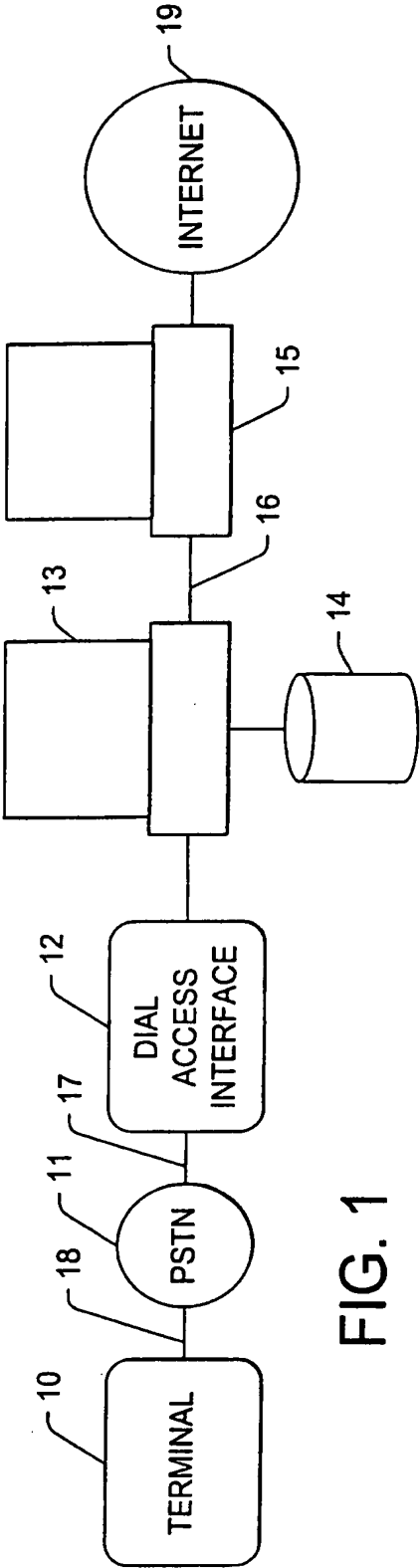


FIG. 1

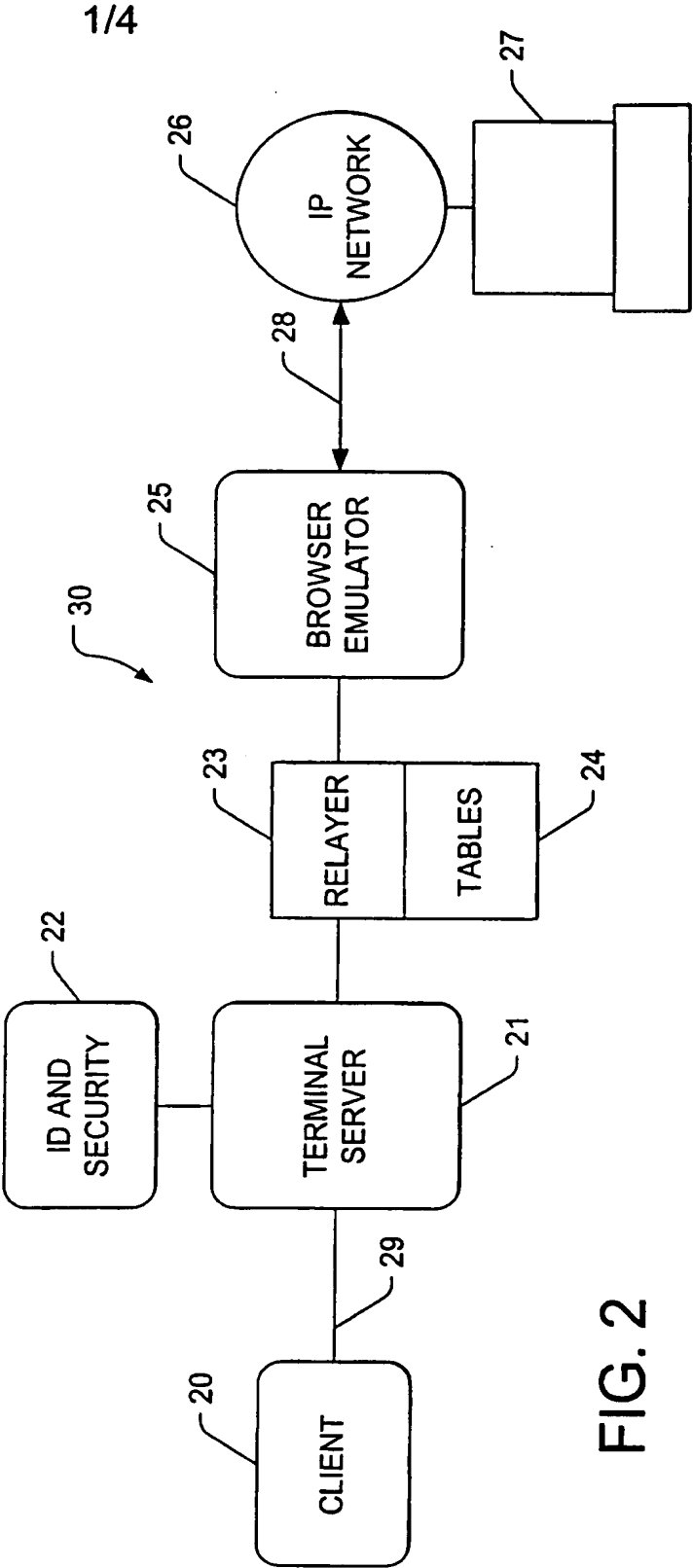


FIG. 2

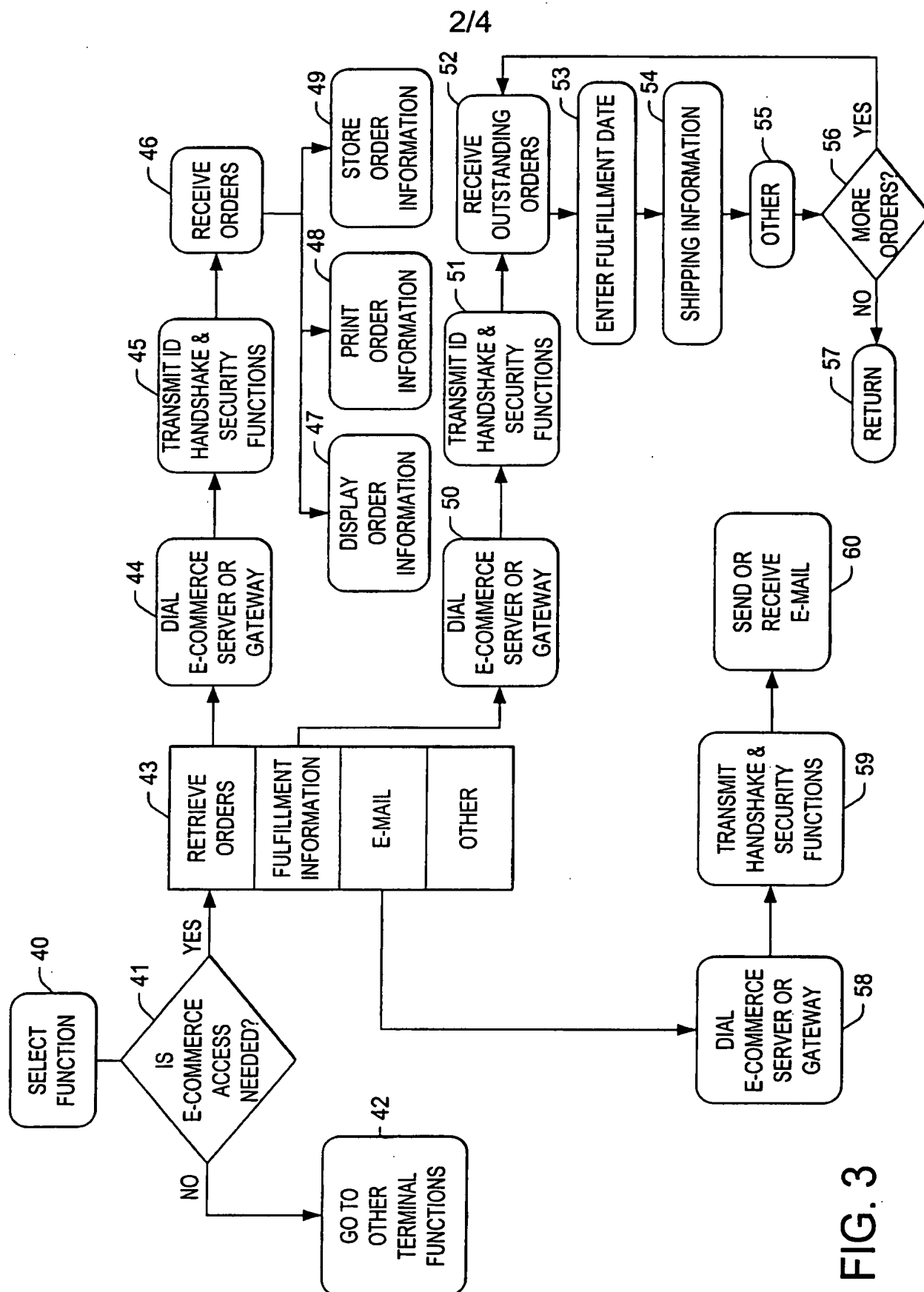


FIG. 3

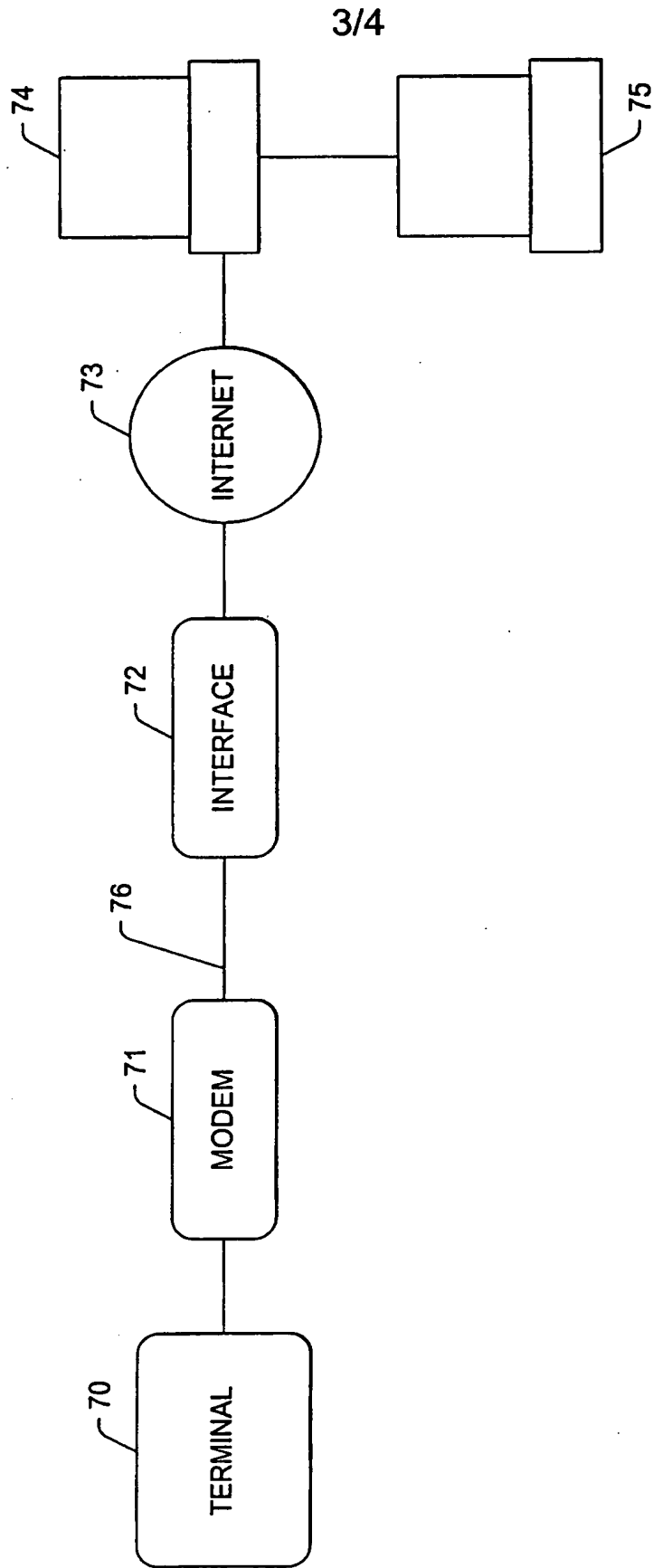
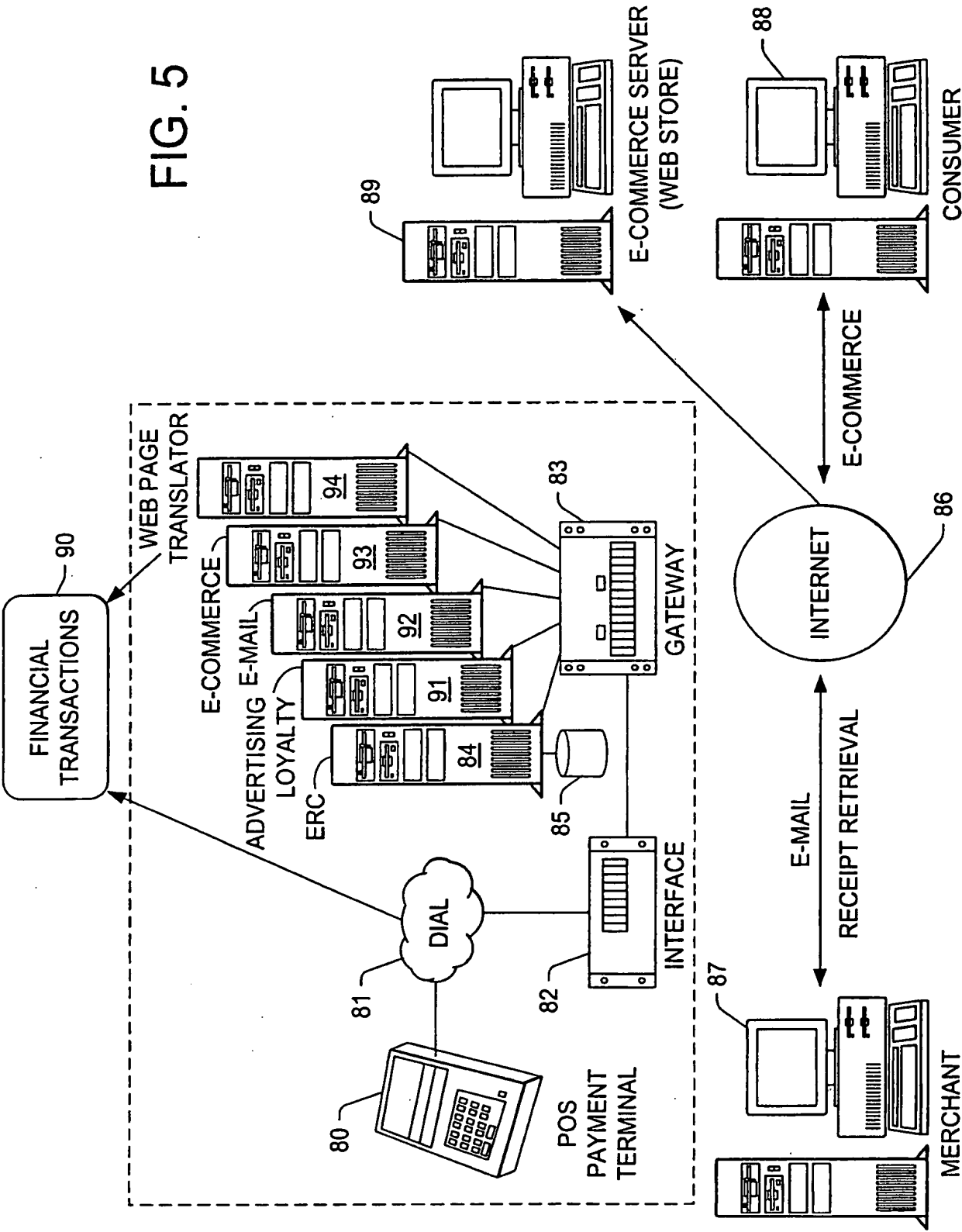


FIG. 4

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FIG. 5



INTERNATIONAL SEARCH REPORT

Int. J. Application No
PCT/US 00/33556

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G07F7/10 H04L29/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G06F G07F H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 0 858 201 A (SUN MICROSYSTEMS INC) 12 August 1998 (1998-08-12) column 5, line 30 -column 6, line 28 column 7, line 11 -column 15, line 26; claims 1-4,10,11; figures 2-8	1-6,8,10
Y	WO 99 28830 A (KORMAN BRUCE R) 10 June 1999 (1999-06-10) page 3, line 35 -page 5, line 5; figure 3 claims 1,2,4,5,17,18,20-22,36-39,42,43	1-6,8,10
X	WO 97 45796 A (BARCELOU DAVID M) 4 December 1997 (1997-12-04) the whole document	3

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

20 March 2001

Date of mailing of the international search report

29/03/2001

Name and mailing address of the ISA
European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Paraf, E

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/33556

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
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A	WO 99 07121 A (NETADVANTAGE CORP) 11 February 1999 (1999-02-11) page 2, line 26 -page 3, line 22; figures 1,2 ---	1,2,4,5, 8,10
A	US 5 754 772 A (LEAF SHAWN T) 19 May 1998 (1998-05-19) column 1, line 57 -column 2, line 61 column 4, line 44 -column 6, line 49; figures 1-4,10-12 ---	1,2,4-6, 8,10
A	GB 2 328 532 A (IBM) 24 February 1999 (1999-02-24) page 6, line 18 - line 30; claims 6-8; figures 2,5,6 -----	1-3,8

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Information on patent family members

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